OTOLOGY.

UNDER THE CHARGE OF

CHARLES H. BURNETT, M.D.,
AURAL SURGEON, PRESBYTERIAN HOSPITAL, ETC., PHILADELPHIA.

THE TELEPHONE AND AFFECTIONS OF THE EAR.

M. LAUNOIS, of Lyons, France, alludes to the observations of Blake, of Boston, upon the effects of the habitual use of the telephone upon the already diseased ear, and offers the following conclusions (*Annales des Maladies de l'Oreille*, October 18, 1889):

1. The frequent use of the telephone seems to have no bad effect on the healthy ear, but is injurious to an ear already previously affected.
2. Its use brings about a further diminution of hearing by fatigue of the auditory attention, tinnitus aurium, and various subjective noises, headache, vertigo, nerve hyperexcitability, and even temporary psychic disturbances.
3. These symptoms are often transitory and disappear when the ear grows accustomed to the use of the telephone. In all cases they disappear nearly entirely with cessation of employment of the instrument.

THE NEW PHONOGRAPH OF EDISON AS A UNIVERSAL ACOUMETER.

DR. L. LICHTWITZ, of Bordeaux, proposes the employment of Edison's new phonograph as the universal acoumeter (*Annales des Maladies de l'Oreille*, October, 1889). At present the three tests of hearing are the watch, the tuning-fork, and the human voice. The first-named is very poor, the last-named is the best. The characteristics of a good acoumeter are then given as follows:

1. The acoumeter should be able to emit all the sounds perceptive by the normal human ear, especially speech in all its inflections.
2. It should be a constant source of sound in order to facilitate a comparison of hearing in different patients, and in the same patient at different epochs of his disease.
3. It should be an apparatus of uniform construction, in order to render its employment universal among aurists of all countries, and make the registration of audition easily comprehensible, as the ophthalmologists can do in regard to vision.
4. Its employment should be easy, without requiring too much time or space for its use.
5. It should render possible the measurement of the sharpness of hearing both by aërial and cranio-tympanic conduction.

The new phonograph of Edison possesses, if not all of these qualities, at least the first two, which are indispensable in a good acoumeter, and it is said to be possible, by some modifications, to give this instrument all the desired qualities of a perfect acoumeter.

ON THE REMOVAL OF BONY GROWTHS FROM THE EXTERNAL AUDITORY CANAL.

A discussion, at the late meeting of the British Medical Association, was introduced by the opening address of Mr. George P. Field, president of the Section of Otology on the above-named subject.[1]

SIR WILLIAM DALBY, St. George's Hospital, London, in his remarks, gave a brief account of the circumstances under which the removal of bony growths from the external auditory canal by means of drilling, came into use. He stated that previous to the end of the year 1874 he had conceived the idea of removing bony growths from the external ear by means of drilling, and he had already, before that time, removed outgrowths "by passing into them through three needles a continuous current of electricity from six pairs of plates of Stöhrer's battery." This process is slow, however, and will not answer where immediate relief is demanded.

Time is saved by using an ordinary Cutriss electro-motor, to the spindle of which is attached a long flexible arm, terminated at its free extremity by a hand-piece adjusted to hold any required instrument. The rate of revolution is completely controllable by means of a resistance coil, and can be varied from 200 to 5000 turns a minute.

It was found that 2500 revolutions was the limit of speed which could be used. Less velocity would not grind the tumors away; and greater velocity, by its tremendous friction, produced excessive heat, and destroyed the temper of the burrs. The oozing of blood is controlled by the heat of the friction produced by even the proper number of revolutions per minute, the heat coagulating the albumen and checking the hemorrhage. Slipping of the instrument is prevented by using the steel guard of Mr. Field.

Much valuable detail regarding conducting the operation is given in the remarks of Sir William Dalby.

The next speaker was Mr. A. MARMADUKE SHEILD, of Charing Cross Hospital. His remarks were chiefly in favor of displacement of the auricle as a means of getting at and removing exostoses from the auditory canal; and he reported a case thus operated upon by him. His conclusions are:

"1. That the operation of displacing the auricle is free from any special difficulty or risk, and gives remarkable access to the deeper parts of the canal.

"2. That it may be undertaken in special cases of impacted foreign body, or in cancellous exostosis, or possibly as an adjunct to the operation of drilling."

MR. THOMAS BARR, of Glasgow, the next speaker, confined his remarks to the consideration of those cases of exostoses of the auditory canal which do not call for operative treatment, but "in which the osseous tumor seems to close entirely the external canal of the ear, producing almost total loss of hearing power, and yet where, after a period of treatment not involving operation, the hearing returns to its previous condition." Then follow some illustrative cases, in which it was shown that, "where slight almost imperceptible swelling of the cutaneous lining produces the closure, we are apt to regard operative removal as the only method likely to improve matters, but it is well to remember, in considering the question of operation, that there are cases in which the hearing may spontaneously, or as the result of simple treatment, be restored; and that operation may often thus be postponed for years, and may, indeed, never be called for."

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[1] Noticed in this Journal, October, 1889.

Mr. R. C. Ellis, of Newcastle-on-Tyne, next related the case of a girl in whose ear a bony growth simulated a foreign body, causing deafness. This was diagnosed as an exostosis springing from the annulus tympanicus. The presenting portion of the growth "from its nipple-like form, allowed of its being seized by a dentist's curved forceps," and extracted like a tooth. Its removal was followed by considerable hemorrhage. At the end of a week's treatment the hearing was found entirely restored.

The last communication on this subject was from Prof. Adam Politzer, of Vienna. It referred chiefly to four specimens of exostosis in the auditory canal. The first was in a skull brought from the island of Borneo. The second specimen was a temporal bone showing a pedunculated exostosis at the entrance of the osseous meatus, springing from the outer part of the anterior convoluted portion of the tympanic bone, and having a small, slender pedicle, and was about the size of a pea. The third specimen was that of an exostosis the size of a pea, removed from the lower wall of the meatus of a healthy man. It was attached by a constricted base to the lower wall of the osseous canal, and very easily seen when the auricle was drawn backward. The favorable situation of the growth permitted its ready removal by two moderately strong blows of a mallet upon a flat gouge applied to its base. The surface of the wound was sprinkled with iodoform and it cicatrized in a few days, without suppuration.

In closing the discussion, Mr. Field drew attention to the fact that soft osseous growths, which occasionally result from chronic suppuration in the ear, are much more simply dealt with than the hard ivory exostoses, with broad base, which grow in the auditory canal; and he claimed that he was the first, in England, to remove such ivory growths from the ear.

Anatomical Lesions of the Organ of Hearing in Endocranial Affections in General, and in Various Forms of Meningitis.

Dr. J. Gradenigo, of Turin, read a paper on this subject at the International Congress of Otology and Laryngology, Paris, September, 1889.

His communication was based on the post-mortem examination of nine cases, as follows: Three cases of tuberculous meningitis, one case of purulent meningitis consecutive to an acute otitis media, two cases of cerebrospinal meningitis, and three cases of cerebral tumor.

His conclusions are:

I. In various forms of meningitis (in all of the six examined by Gradenigo, there is frequently found an inflammatory alteration in the trunks of the seventh and eighth nerves in the internal auditory canal, consisting in hemorrhages and purulent accumulations and infiltrations, due to the propagation of the infectious agent along the sheaths of the nerves. At the entrance of the internal auditory canals these alterations are usually localized in the inter-vaginal space and in the intra-fascicular cavities of the connective tissue. Near the bottom of this canal the two nerves present different conditions; along the facial nerve, on account of the thickness of the nervous trunk, the tendency to exudation is maintained as far as the geniculate ganglion, with relative integrity of the nerve fibrillæ along the acoustic nerve; on the contrary, the hemorrhagic and purulent exudation penetrates between the nerve-fibrillæ which separate at the fundus of the canal to enter the modiolus, and which are thus compromised or destroyed to a large extent.

Thus is explained the pathogenesis of Voltolini's disease (*otitis labyrinthica*), which is evidently caused by an acute neuritis in the auditory nerve, due to a diffusion of the infectious process in the meninges, with occasionally propagation to the internal ear. The difference in the processes in the facial and acoustic nerves is due to the anatomical differences between the two nerves. The alterations thus described are analogous to those met in other cerebral and peripheral nerves in certain acute and infectious maladies, and in the case of the acoustic nerve in diphtheria (Moos).

In the majority of cases of meningitis of fatal termination, examined by the author, the neural changes, which could be followed to the geniculate ganglion and along the canalis singularis, did not pass beyond the *tabula cribrosa*. In some cases only traces of infiltration could be seen along the nerve-fibrillæ and in the gyrus basilaris of the ganglion of Rosenthal, so that we are warranted in believing this is the usual way of propagation of the morbid process to the labyrinth. The aquæductus cochleæ was always found intact by Gradenigo.

In the majority of his cases, the author has met tympanic lesions, at least on one side, in the form of otitis media, with mucous or purulent exudation, and in one instance hemorrhagic exudation. This connection apparently existing between such lesions and the infectious meningitic process, the author cannot yet venture to explain.

II. In endocranial affections, accompanied by an augmentation of pressure and of optic papillitis, there may also arise in the acoustic nerve a lymphatic stasis, which is revealed only by an augmentation of electric excitability of the nerve.—*Annales des Maladies de l'Oreille*, September, 1889.

THE PERFORATION OF SHRAPNELL'S MEMBRANE.

DR. B. ALEXANDER RANDALL, of Philadelphia, read a paper on this subject at the meeting of the American Otological Society, July, 1889. His special purpose in this article is to lay stress upon the point that perforation of Shrapnell's membrane is far from infrequent, and to claim that constant vigilance in this direction will bring to light an unexpectedly large number of cases. Notes of twenty cases are given, in twelve of which the perforation was in Shrapnell's membrane alone; in six there was another perforation (in the membrana vibrans) generally extensive; in two the lower perforation had cicatrized when the upper was first seen to discharge. The author then discusses the existence of the so-called "foramen of Rivinus," and denies its existence. The weight of authority is on his side.

Nothing is offered in this paper as a cure for the form of chronic purulency of the tympanic cavity having its outlet through the perforation in the flaccid membrane. In the experience of the reviewer, this form of purulency of the attic is a symptom of necrosis in that part of the drum-cavity, and nothing but drainage, to be secured by excision of the membrana tympani, and the malleus and incus, and a thorough medication of the diseased attic, will effect a cure. Not only will a cure of the purulency be thus gained, but the hearing, which is always impaired in this disease, may be improved by the operation.

DISEASES OF THE LARYNX AND CONTIGUOUS STRUCTURES.

UNDER THE CHARGE OF

J. SOLIS-COHEN, M.D.,
OF PHILADELPHIA.

ANGIOFIBROMA OF THE TONGUE.

DR. GEORGE FISCHER describes (*Deut. Zeitschr. für Chir.*, September 5, 1889, p. 581, 29 Bd. 5 u. 6 H.) a mixed tumor of the tongue, composed of cavernous angioma and fibroma, and which, to the best of his knowledge, has not been described before.

A cabinetmaker, thirty-seven years of age, who had never been sick before, noted under the left side of the lower jaw a tumor the size of a hazel-nut. It was movable and painless, and it gradually enlarged. About nine months after this he became conscious of a swelling in his mouth which enlarged, and which in three months produced difficulty in swallowing and in talking. At this time he began to expectorate dark blood. Three months later, when first seen by Fischer, he presented a cachectic aspect and was poorly nourished, yet appetite and sleep were good. A large tumor, eight and two-thirds inches in its largest horizontal circumference, stretched from one angle of the lower jaw to the other, circumscribed by the anterior borders of the sterno-cleido muscles. It reached to the hyoid bone, which was pushed downward to a distance of three and one-fourth inches from the edge of the chin. It was slightly furrowed in its middle, and projected more on the left side than on the right. It was very soft and fluctuating. A single vein glimmered through the normal and non-adherent skin. A slight pulsation existed in the left side of the tumor, isochronous with the radial pulse. The mucous membrane of the floor of the mouth projected behind the teeth. The left half of the tongue appeared thickened and was strongly pushed upward, so that the base of the tongue nearly reached the hard palate. A futile attempt was made to remove the tumor. After the operation had lasted an hour and a half, collapse began and was soon followed by death despite several injections of camphoric ether. The tumor in the neck became much smaller during the operation; and when extirpated, after death, was found principally lingual, to which the mass in the neck hung as an appendix. Examination of the tumor showed it to be an